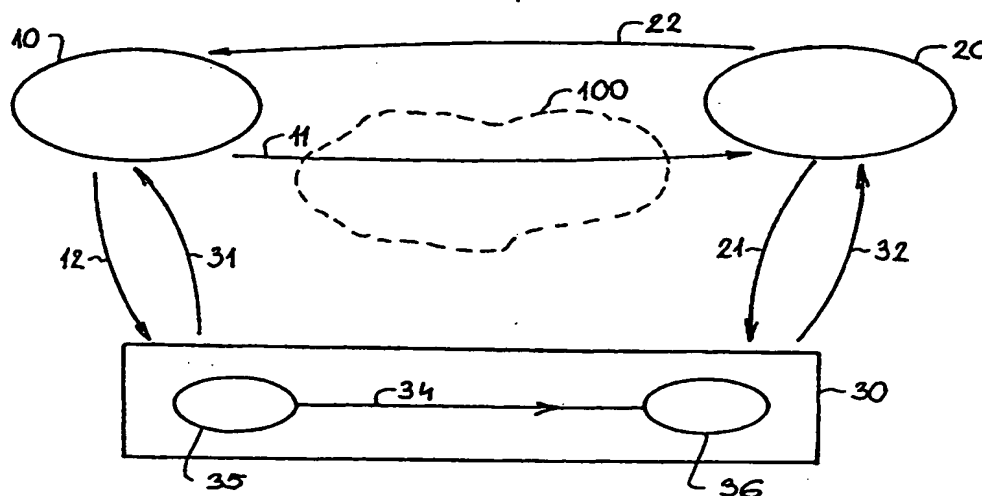




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(54) Title: **METHOD FOR CHECKING RIGHTFUL USE OF A DEBIT CARD OR SIMILAR MEANS GIVING RIGHT OF DISPOSING OF A BANK ACCOUNT**



## (57) Abstract

The procedure according to the invention can be used both for granting authority verbally or electronically for the usage of a bank card, or for performing the investigation of the authority of a money order, prior to its execution. The essence of the procedure is that, prior to each intended transaction, in addition to the otherwise well known authorizing signal with a meaning of permitting the use of the card or to issue a money order, the authorizing signal will be overwritten by an authorization override signal, deducted from a return message signal obtained previously from the decision maker through a telecommunication network, preferably through a digital mobile telecommunication network, in the form of an SMS message signal, as a reply to an authorization override request message, and the transaction is authorized by means of the authorizing signal validated by and having the meaning of the override authorization signal.

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METHOD FOR CHECKING RIGHTFUL USE OF A DEBIT CARD OR SIMILAR MEANS GIVING RIGHT OF DISPOSING OF A BANK ACCOUNT

Technical field

10       The present invention relates to a procedure to ensure the authority of using a bank card or other means providing right of disposal of a bank account, said procedure being applicable both in verbal or electronic way of authorization to use a bank card, and during the investigation of a commission to perform a cash disbursement or money remittance prior to  
15 its execution, being suitable also for preventing damages resulting from unauthorized use of bank cards or other means. In the course of performing the procedure according to the present invention, granting the authority to use a bank card or other means is carried out in order to execute a transaction which results in changing the balance of a given bank account,  
20 and during the execution of the procedure of the present invention the authority to use the card or other means is granted.

Background art

25       In the present description below the term "bank card" or "card" is meant to include the terms "deposit card", "credit card", "mixed card" and "virtual bank card", and further the definition "means providing right of disposal of a bank account" refers to the possibility available for a person of disposing of a given bank account by means of a verbal or written order or by way of using some other specified means such as, e.g. a written  
30 money order or other commissions transmittable in written form; verbal instructions given by word of mouth or transmitted through a telecommunication network; instruction signals generated in a computer; e-mail messages; SMS messages; a remote input terminal, etc.

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5 It is known that when using a bank card to perform a transaction e.g. to withdraw cash, to buy something, availing oneself of a service or executing a purchase in a commercial unit, or in case of a purchase by using the card number or the bank account number only in a virtual warehouse, operated through the INTERNET or other networks, the unit  
10 accepting the card, usually a commercial unit or post office, an automatic teller machine (ATM) or a warehouse, etc., in order to get authorization to execute the transaction, contacts the principal bank or banking institution keeping the backing account of the card through reading the bank card electronically by means of its POS terminal or by other means, provided if  
15 said commercial unit has full or semi-on-line connection directly or through its own principal bank with the principal banking institution keeping the backing account of the card.

The bank, in its procedure aimed at granting the authorization, checks the existence and validity of the card and seeks whether sufficient  
20 funds are available on the backing account to cover the requested transaction. The authorization procedure is carried out in such a way that the data signal, generated by composing the details of the transaction to be carried out with the characteristic data of the card and that of the backing account, is evaluated by means of comparing said data signal with the  
25 respective set of data stored in the appropriate data file of its own computer and, depending on the results of the evaluation, a signal permitting or prohibiting the requested transaction is generated, which signal is then returned to the site of usage.

If the result of the above authorization procedure is positive, then the  
30 commercial unit, besides checking the right of disposing of the card e.g. by identifying the person using the card, by his identification card or by signature comparison, or by verifying the rightful use of the of card in some other way as well, e.g. by asking for entering the PIN code, draws up the

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5 charge certificate, in case of a purchase makes out the bill and, in such cases, the user of the card is usually asked to sign the bill and, depending on the characteristics of the available connection, either immediately or at a later time, in an accumulated form, withdraws the corresponding equivalent sum from the specified account of the card holder.

10 Practically, a similar procedure is followed also in places having no POS terminal. In such cases, permission for granting the use of the card at the unit, e.g. a commercial unit, a post office, etc., is obtained from the bank verbally through a telephone link, and in the possession of such a permission the charge certificate is drawn up, and the bearer is asked to  
15 sign it. The account of the card holder is charged on the basis of this signed charge certificate.

Concern arises, however, when somebody tries to use a card illegally, e.g. trying to pay with a stolen or found card, but the card itself is not forged, and the required sum is available on the bank account serving  
20 as backing of the card, either in the form of deposit or amount of credit granted, and the unauthorized user is capable of making pretense of authorized usage of the bank card, e.g. by imitating the signature, or by having unwarrantedly got to know the PIN code. It may also cause concern when the identification number of somebody's card or bank account  
25 becomes known to an unwarranted person, e.g. by having read off the number either directly or in other way, e.g. from the INTERNET web and, with that knowledge, he buys to the debit of the bank account of the card holder or holder of the bank account, under an arrangement requiring no other identification to receive the purchased goods, or the unwarranted  
30 user has managed to become acquainted with the required second set of identification data, name, address, etc.

Similarly, remittances initiated illegally from a terminal located at the customer and linked up with the computer of the bank, permitting direct

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5 remittances requiring no further personal intervention, such as e.g. remittances requested outside the office hours of the bank because the working hours of the beneficiary lie in another time zone, as well as remittances initiated in the possession of the illegally acquired identification data through telephone will become known to the holder of the account only  
10 when the charges have already appeared on his bank account, i.e. when the holder has already suffered the loss.

In such cases, according to the present state of the art, unauthorized use of the card or unlawful charging of a bank account cannot be prevented in a satisfactory way, which imposes a loss on the bank as owner of the  
15 card and/or on the holder of the card and on the holder of the bank account, respectively.

It is also true that the holder of a card, in the case of losing, theft or unauthorized use of his card, or after becoming aware of unauthorized charging of his bank account is entitled to stop the validity of the card, i.e.  
20 to freeze his account or other arrangement serving as coverage of his card at the issuing bank, or to stop payments from his bank account in the case of an unauthorized remittance, or to issue a coverage verification or garnishment of payments, but this is usually done only after the card holder has become aware of the appearance of cost of purchases made to the  
25 debit of his account but not performed by him or with his consent, or when the holder of the bank account has noticed the remittances charged on the account or, very often, only after having received notice on the exhaustion of his account, and this way only after the owner suffered the loss.

The main periods of using the bank card as cash substituting means  
30 usually fall outside the working hours of the bank, and in some cases the card usage takes place in another time-zone and, generally, the sum spent is not too much, the purchased goods serving the requirements of a single person or a family. Considering the present state of the art and the usual

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5 volume of such purchases, obtaining previous approvals of the holder of  
the account to eliminate unauthorized use of the bank card would render  
such shopping too cumbersome, causing unnecessary delays and, due to  
the possible inaccessibility of the holder of the account, a high proportion of  
purchases would fail and the operating costs and the closing times would  
10 considerably increase. It is an established practice of banks for preventing  
undesirable uncovered shopping to which, sooner or later, an unauthorized  
use of the card would lead, to limit the number of such purchases to one  
card/day, and to restrict the maximum sum/day that can be withdrawn from  
a card-backing account, yet this practice offers advantages for the banks  
15 only and does not protect the account holder against unauthorized usage  
of, or remittance through, a bank card.

The damage imposed on card owners and/or card holders, as well as  
on the bank account holders, as well the annoyance of holders of bank  
accounts, affecting many things, has rendered necessary to find an  
20 arrangement offering the possibility of introducing a procedure more  
efficient than those known so far to ensure the authorization to use of a  
bank card or other means providing right of disposing of a bank account for  
performing transactions effecting a change in the balance of a bank  
account, particularly such as shopping through the INTERNET, withdrawing  
25 cash, paying with a bank card, performing remittances from a bank account  
etc., in order to prevent unauthorized payments and unauthorized  
remittances, thereby successfully averting the occurrence of damages.

#### Disclosure of the invention

30 The present invention is based on the recognition that any  
unauthorized use of bank cards and illegal remittances can effectively be  
prevented only if, in the case of natural persons, the card owner or bank  
account holder and, in the case of legal entities, the person named as

5 decision maker is drawn into the approval of each transaction. Another recognition is the fact that, at the present state of art of the communication means, involving the owner of the card or the account holder can be done without causing any concern or hindrance to the cash flow. Further connected to this is the recognition that the extra authorization should be  
10 carried out in such a way, that excludes the possibility of performing it by an unwarranted person. Further, there is the recognition too, that by cutting the authorization procedure into two levels, besides it makes the unwarranted use of a card even more difficult, it also makes the authorization itself faster.

15 Thus, in the procedure proposed by the present invention to ensure the authority of using a bank card or some other means providing right of disposal of a bank account to perform a transaction resulting in a change of balance of the bank account and checking the authority of an involvement into the authorization procedure, the usage will be authorized and,  
20 depending on the result of this authorization procedure, the use of the card or other means will either be permitted or prohibited. The essence of the procedure is that an authorization override request signal, preferably an authorization override request signal carrying certain information about the transaction and/or the bank account to be charged by the transaction and/or  
25 the expected change in the balance of the bank account involved, is generated, the authorization override request signal is converted into a message signal that can be sent through a telecommunication network, preferably through a digital mobile telecommunication network, preferably in SMS mode of operation, and this message signal is transmitted through  
30 the telecommunication network, preferably in SMS mode of operation, to a telecommunication device, preferably a mobile telephone set, which is capable of sending a return signal, and having a call number given by the person having the right of disposal of the bank account to be charged by



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5 the transaction, then from the return signal received through the telecommunication network, preferably in SMS or DTFM mode of operation, or from the return signal received in the form of a tone, or in case such a return signal is not received within a predetermined period of time, a return signal, that can be evaluated by the computer, is deducted,  
10 an authorization overriding signal with a meaning of either permission or prohibition, corresponding to the information content of the received signal is generated, by means of which authorization overriding signal the usage is either permitted or prohibited.

During the execution of the procedure according to the present  
15 invention, within the framework of the authorization the data signal, generated with the characteristics of the intended transaction and with the characteristics of the bank card or other means and/or with the characteristics of the bank account to be charged, is evaluated by way of comparison, in the known way, with the set of data stored in the computer  
20 in the respective data file and, depending on the result of this evaluation, a signal with the meaning of either permission or prohibition is generated. This signal is then transmitted to the site of usage.

In a second preferred embodiment of the present invention the authorization override request signal is generated prior to the authorization.

25 In a third preferred embodiment of the present invention the authorization override request signal is generated after the authorization.

In a fourth preferred embodiment of the present invention the authorization override request signal is generated simultaneously with the authorization.

30 In the second embodiment of the solution according to the present invention, besides that during the procedure to ensure the authority of using a bank card or some other means providing right of disposal of a bank account to perform a transaction resulting in a change of balance of a bank

5 account and checking the authority of an involvement into the authorization procedure, the usage will be authorized and, depending on the result of this authorization procedure, the use of the card or other means will either be permitted or prohibited, the procedure is carried out in such a way that an authorization override message signal, preferable an authorization override  
10 message signal carrying certain information about the transaction and/or the bank account to be charged by the transaction and/or the expected change in the balance of the bank account involved, is generated, the authorization override message signal is transferred to the bank keeping the account through a telecommunication network, preferably in SMS mode  
15 of operation or in DTFM mode of operation or in tonal form, there an authorization override signal that can be evaluated by a computer is deducted from the authorization override message signal, by means of which authorization overriding signal the usage is either permitted or prohibited.

20 In the third embodiment of the solution according to the present invention, where during the procedure for ensuring the authorization of using a ban card or some other means providing right of disposal of a bank account to perform a transaction resulting in a change of balance of a bank account and ensuring the authority of an involvement into the authorization  
25 procedure, the usage will be authorized and, within the framework of the authorization procedure a data signal generated with the characteristics of the intended transaction and with the characteristics of the bank card and/or the bank account to be charged is evaluated by way of comparison in the known way with the set of data stored in the computer in the  
30 respective data file and, depending on the result of this evaluation, a signal with the meaning of either permission or prohibition is generated, which signal is used then as a proof of authority, which signal will, in certain cases, be transmitted to the site of usage, the procedure is carried out in

5 such a way, that an authorization override request signal carrying certain characteristic data of the transaction and, in certain cases, that of the bank card and/or the bank account to be charged by the transaction, is generated, the authorization override request signal is converted into a message signal that can be transmitted through a digital mobile  
10 telecommunication network in SMS mode of operation, the message signal is transmitted through the telecommunication network to, and written into the message storing memory of the mobile telephone set, the call number of which is given by the person having the right of disposal of the bank account to be charged by the transaction, at the same time the message is  
15 displayed on the display unit of the mobile phone, then the return signal received through the telecommunication network, preferably in SMS mode of operation, or the lack of such a return signal within a predetermined period of time, is converted into a return signal that can be evaluated by a computer, this return signal is then evaluated by the computer, and an  
20 authorization overriding signal, with a meaning of either permission or prohibition corresponding to the information contents of the received signal, is generated, by means of which authorization overriding signal the permissive authorization signal will be overwritten.

25 Brief description of the drawings

Figure 1 is a flowchart of a first embodiment of the first version of the procedure according to the present invention, where the bank requesting the authorization and the principal bank of the account holder is the same;

30 Figure 2 is a flowchart of a second embodiment of the first version of the procedure according to the present invention where the account holder is registered in the bank requesting the authorization, but his account is kept by another bank;

5           Figure 3 is a flowchart of the second version of the procedure according to the present invention, where the principal bank of the authorization requester and the principal bank of the account holder are different, and the account holder gives his authorization override to his principal bank in advance;

10           Figure 4 is a flowchart of a such an embodiment of the first version of the procedure according to the present invention, where the principal bank keeping the account of the authorization requester and the principal bank of the account holder are different, and the account holder is in contact only with his principal bank;

15           Figure 5 is a flowchart of such an embodiment of the first version of the procedure according to the present invention where, the authorization override through the authorization network precedes the authorization; and

            Figure 6 is a flowchart of such an embodiment of the first version of the procedure according to the present invention, where an authorization  
20   override procedure through a network, e.g. through the INTERNET network, precedes the authorization.

#### Best mode of carrying out the invention

            Figure 1 is a flowchart of an embodiment, given as an example, of  
25   the first version of the procedure according to the present invention to ensure authorization, where there are three participants in the procedure, the first one of them being the person who has the right of disposing of a bank account, which is to be charged by a given transaction, and the payment is to be done by using a bank card, virtual bank card or other  
30   means, for sake of simplicity hereinafter called bank card, this person hereinafter is called an account holder 10; the second participant is a person or organization, e.g. a warehouse, a POS terminal, etc., which sells goods or provides services or other values, e.g. dispenses money, and at

5 which participant payment is possible by using a bank card, and which participant would like to obtain the payment through a remittance to his bank account, for sake of simplicity this participant hereinafter is called a requester of authorization 20; and finally the third participant is a bank 30 which keeps, on the one hand, a certain account 36 of the requester of  
10 authorization and, on the other hand, a covering account 35 of the bank card of the account holder 10, where, among others, the data required for establishing a quick connection to the account holder 10 through a telecommunication network are also stored. In the course of purchasing, account holder 10, preferably by establishing a computer linkage, either  
15 personally or through a telephone or computer network, e.g. through the INTERNET network 100, submits his order and, at the same time, his bank card or his initiative 11 including the identification data of his bank card together with other data referring to the mode of payment to the requester of authorization 20, who requests an authorization permitting the use of the  
20 bank card by issuing, through his appropriate terminal, a request of authorization signal 21 to the bank 30. Out of the appropriate data of the authorization requesting signal 21, an authorization override request signal is produced by the bank 30 using electronic data processing, and from this authorization override request signal a message signal 31 is deducted,  
25 again by using electronic data processing, which message signal 31 is transmitted, preferably in SMS format, through an appropriate terminal and usually through the center of a mobile telephone network, to the mobile telephone set of account holder 10. Depending on the information content of message signal 31, received by his mobile telephone set, either a  
30 permitting or a prohibiting return message signal 12 is produced by the account holder 10, which will then be returned to the bank 30 through the telecommunication network, preferably in SMS or DTFM mode of operation or in the form of a tone signal. From this return message signal 12 or from

5 the lack of it within a predetermined period of time, a return signal understandable by a computer is produced at the bank 30, and an authorization override signal with a meaning of either permission or prohibition is generated, depending on the information content of the return signal. Besides this, bank 30 checks whether enough funds are available  
10 on a backing account 35 of the account holder 10 to cover the particular transaction, and accordingly, produces an authorizing signal with the appropriate meaning. In case of an authorization override signal with an affirmative meaning for the authorization requester 20, the bank 30 authorizes the use of the card by sending an authorizing signal 32  
15 generated from the corresponding authorization signal with the appropriate meaning, then, at the occurrence of the use of the card, it also charges the backing account 35 of the account holder 10 with the consideration sum, which, together with a remittance 34, it also will credit to an account 36 of the authorization requester 20. The acceptance of the order will be signaled  
20 back to the account holder 10 by the authorization requester 20 by sending an acknowledgement 22 with the appropriate meaning.

In the case, when a return message signal 12 with a meaning of prohibition has been received by the bank 30, it issues an authorizing signal 32 with a meaning of prohibiting the use of the card to th  
25 authorization requester 20.

Figure 2 is a flowchart of a second embodiment, given as an example, of the first version of the procedure according to the present invention to ensure authority where, besides account holder 110 and an authorization requester 120, shown in connection with Fig. 1 and having the  
30 functions described there, there are further participants, i.e. a bank 130 keeping an account 136 of the authorization requester 120, a bank 150 keeping an account 156 of the account holder 110, and an authorization network 140 connecting the two banks. Account holder 110 is registered at

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5 the bank 130, and; among his registered data 135, the appropriate data required for establishing a quick connection with the account holder 110 through a telecommunication network are also stored. In the course of a purchase, similarly to the procedure described in connection with Fig. 1, account holder 110, preferably by establishing a computer connection,  
10 either personally or through a telephone or computer network, e.g. through the INTERNET network 100, submits his order and, at the same time, his bank card or his initiative 11 including the identification data of his bank card together with other data referring to the mode of payment to the requester of authorization 120, who requests an authorization permitting the  
15 use of the bank card by issuing, through his appropriate terminal, a request of authorization signal 121 to the bank 130. Out of the appropriate data of the authorization requesting signal 121, an authorization override request signal is produced by the bank 130 using electronic data processing, and from this signal a message signal 131, transmittable through a  
20 telecommunication network, is deducted, again by using electronic data processing, which message signal 131 is transmitted, preferably in SMS format, through an appropriate terminal and usually through the center of a mobile telephone network to the mobile telephone set of account holder 110. Using the data, recorded in the register 135 of the bank 130, message  
25 signal 31 is transmitted, preferably in SMS format, usually through the center of a mobile telephone network to the mobile telephone set of account holder 110. Depending on the information contents of message signal 131 received by his mobile telephone set, either a permitting or a prohibiting return message signal 112 is produced by the account holder  
30 110, which will then be returned to the bank 130 in the way described in connection with Fig. 1. At the same time, in order to authorize the given usage of the bank card, a signal 132 and an authorizing signal 141 deducted from signal 132 is sent through the authorization network 140 by

5 the bank 130 to the principal bank 150 of account holder 110 keeping his card backing account 156, to which a return signal 151 with a meaning of permission or prohibition and an authorization signal 142 deducted from signal 151 will be received, also through the authorization network 140. From the return message signal 112, received through the  
10 telecommunication network or from the lack of this return message signal 112 within a predetermined period of time, a return signal understandable by a computer is produced, and an authorization override signal with a meaning of either permission or prohibition is generated, depending on the information content of the return signal. With the exception of a return  
15 message signal 112 of prohibition, the use of the card is permitted by sending an authorizing signal 133 with a meaning which corresponds to the meaning of the authorizing signal 142 to the authorization requester 120.

The acceptance of the order will be signaled back to the account holder 110 by the authorization requester 120, by sending an  
20 acknowledgement 122 with the appropriate meaning.

At the occurrence of the card usage, its backing account 156 of account holder 110 kept at the bank 150 will be charged with the consideration sum, which will also be credited to the account 136 of the authorization requester 120 at the bank 130.

25 If a return message signal 112 with a meaning of prohibition has been received by the bank 130, then it issues an authorizing signal 133 with a meaning of prohibiting the use of the card to the authorization requester 120.

Figure 3. is a flowchart of an embodiment, given as an example, of  
30 the second version of the procedure according to the present invention to ensure authority where, besides account holder 210 and an authorization requester 220 shown in connection with Fig. 1 and having the functions described there, there are further participants, i.e. a bank 230 keeping an



5 account of authorization requester 220, a bank 250 keeping an account of  
account holder 210, and an authorization network 140 connecting the two  
banks. At the bank 250 data are also stored that are necessary for  
establishing quick connection with account holder 210. In the course of a  
purchase, similarly to the procedure described in connection with Fig. 1,  
10 account holder 210, preferably by establishing a computer connection,  
either personally or through a telephone or computer network, e.g. through  
the INTERNET network 100, submits his order and, at the same time, his  
bank card or his initiative 211 including the identification data of his bank  
card together with other data, referring to the mode of payment, to the  
15 requester of authorization 220, who requests an authorization permitting the  
use of the bank card by issuing, through his appropriate terminal, a request  
of authorization signal 221 to the bank 230. At the same time, account  
holder 210 sends an authorization override message signal 212 to his own  
principal bank 250 with an information content that enables the intended  
20 simultaneous purchase with the card, limiting its location and sum. Bank  
230 sends a signal 231 and an authorizing signal 241 deducted from signal  
231 through the authorizing network 240 to the account holder's 210  
principal bank 250 keeping his card backing account, in order to authorize  
the use of the card, to which a return signal 251, overridden by the  
25 authorization override message signal 212, and a usage authorization  
signal 231, deducted from signal 251, will be received, also through the  
authorization network 240, at the bank 230 which also sends an  
authorization signal 232 with a corresponding meaning to authorization  
requester 220.

30 The acceptance of the order will be signaled back to the account  
holder 210 by the authorization requester 220, by sending an  
acknowledgement 222 with the appropriate meaning.

5       At the occurrence of the card usage, payment of the consideration sum will be carried out in the known way, by charging the backing account of account holder 210 kept at his principal bank 250.

Figure 4 is a flowchart of a third embodiment, given as an example, of the first version of the procedure according to the present invention to  
10   ensure authority, where connections exist among account holder 310, authorization requester 320, the principal bank 330 keeping the account of authorization requester 320, the principal bank 350 keeping the card backing account of account holder 310 and the authorization network 340 connecting the two banks, already shown in connection with Fig. 3 and  
15   each participant has the functions described there, with the addition that the data, required for establishing a quick connection with account holder 310 through a telecommunication network, are also stored in bank 350.

The purchase, the authorization of the card usage, the payment of the consideration sum and the acknowledgement of the purchase are  
20   carried out in a way described in connection with Fig. 3. The difference is in the authorization overriding of the card usage which, in case of this example, is initiated by the bank 350 at receiving the authorization request 341, and it is carried out in the way explained above in connection with Fig. 1 or Fig. 2, preferably by transmitting in SMS mode of operation through a  
25   digital mobile telecommunication network, and the authorization checking is carried out at the time chosen accordingly, and the card usage authorizing signal 352, already overwritten with authorization override signal 312, is transmitted to bank 330 through the authorization network, and the corresponding authorizing signal 332 is transmitted to the authorization  
30   requester 320.

The flowchart shown in Fig. 5 illustrates such an embodiment of the procedure according to the present invention to ensure authority where connections exist among account holder 410, authorization requester 420,

5 the principal bank 430 keeping the account of authorization requester 420, the principal bank 450 keeping the card backing account of account holder 410 and the authorization network 440 connecting the two banks, already shown in connection with Fig. 3 and 4 and each participant has the functions described there. Data, required for establishing a quick  
10 connection with account holder 410 through a telecommunication network, are also stored in bank 450.

In the course of the purchase, account holder 410 submits his order and, simultaneously, his card or his initiative 411 including the identification data of his card, together with other data referring to the mode of payment,  
15 by establishing a computer connection or in any other way described in more detail above, to the requester of authorization 420, which is usually a virtual warehouse or a certain kind of business partner. Based on the card identification data provided by account holder 410, authorization requester 420 sends an authorization override procedure initiating signal 421 to his  
20 own bank 430 through his own banking connection. Using the information contents of the authorization override procedure initiating signal 421, received through the authorization network 440, or that of signal 431 or signal 441 deducted from signal 421, bank 430 generates a message signal 451 and transmits this signal, e.g. by means of a mobile telephone  
25 network and preferably in SMS format, to the mobile telephone set of account holder 410. Through his mobile telephone set, account holder 410 sends a return signal 412 to the bank 450 which, by processing and returning it to bank 430, in the form of signal 452 or 442, sends an authorization procedure initiating signal 432 to the authorization requester  
30 420. In case of a signal 432 with a meaning of enabling the initiation of the authorization procedure, authorization requester 420 sends an authorization requesting signal 422 to his principal bank 430. In order to issue the authorization, by using the procedure described above in more detail,

5 principal bank 430 turns to principal bank 450 of account holder 410 with an authorization requesting message 423 or 443, through the clearing network 440. In possession of and in accordance with the meaning of the return message signal 412, received from account holder 410, bank 450 transmits usage authorizing signals 453 and 444 and, through the clearing  
10 network 440 and bank 430, an authorizing signal 434, too, with a meaning of corresponding to signal 412, to authorization requester 420.

The flowchart shown in Fig. 6 illustrates such an embodiment of the procedure according to the present invention to ensure authority where connections exist among account holder 510, authorization requester 520,  
15 the principal bank 530 keeping the account of authorization requester 520, the principal bank 550 keeping the card backing account of account holder 510 and the authorization network 540 ensuring the clearing connection between the two banks, already shown in connection with Fig. 3 and 4 and each participant has the functions described there. Data required for  
20 establishing a quick connection with account holder 510 through a telecommunication network are also stored in bank 550.

In the course of the purchase, account holder 510 submits his order and, simultaneously, his card or his initiative 511 including the identification data of his card together with other data referring to the mode of payment,  
25 by establishing a computer connection through the INTERNET 100 or any other network with similar functions, to the requester of authorization 520 which is usually a virtual warehouse or a certain kind of business partner. Based on the card identification data provided by account holder 510, authorization requester 520 sends an authorization override procedure  
30 initiating signal 521 to the principal bank 550 of account holder 510 through the INTERNET network 100. Using the information contents of the authorization override procedure initiating signal 521, bank 550 generates a message signal 551 and transmits this signal, e.g. by means of a mobile

5 telephone network and preferably in SMS format, to the mobile telephone set of account holder 510. Through his mobile telephone set, account holder 510 sends a return signal 512 to bank 550 which, by processing it, sends an authorization procedure initiating signal 552 by means of a computer link through the INTERNET network 100. In case of a signal 552  
10 with a meaning of enabling the initiation of the authorizing procedure, authorization requester 520 sends an authorization requesting signal 522 to the principal bank 530. In order to issue the authorization, by using the procedure described above in more detail, principal bank 530 turns to the principal bank 550 of account holder 510 with an authorization requesting  
15 message 531 or 541, through the clearing network 540. In possession of and in accordance with the meaning of the return message signal 512 received from account holder 510 bank 550 transmits usage authorizing signals 553 and 542 and, through the clearing network 540 and bank 530, the authorizing signal 532, with a meaning of corresponding to signal 512,  
20 to authorization requester 520.

Acknowledging the order is done by means of acknowledgement 523 and, at the occurrence of the card usage, balancing off the consideration will be done, in a way known by itself, through the clearing network.

25 By making the use of a bank card or the execution of a money order dependent on not only an authorization but on an override authorization, too, the procedure according to the invention provides a possibility to completely exclude an unauthorized use. The card holder or the user of the device or the person having the right of disposal of the bank account  
30 always carries his telecommunication device, which can be a pager, a pager made suitable to reply, a telephone set in a coupled network or a mobile telephone set, or a telecommunication device developed specifically for this purpose, with him and operates it, and therefore, in case

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5 of proper use, there is a very slight chance of losing or being stolen of his bank card or his other means providing a right of disposal of his bank account and his mobile telephone set at the same time. Furthermore, even such a person cannot use a bank card or other means, e.g. the identification number of a bank card, in itself, who happens also to be in the  
10 possession of the mobile telephone set, or who gets to possess the telephone set only, because even if such a person detects the incoming authorization override request signal, he does not know the proper way of reply or possibilities of giving the authorization instructions, and therefore, lacking the override authorization, even if the requester can provide all the  
15 necessary data or all data are available for him, the use of the card or other means or the execution of the remittance will be denied of him. A further advantage of the procedure is that the authorization overriding can be used efficiently not only in case of authorization requests or remittance orders received from POS terminals, but also in cases of authorization requests  
20 arriving, e.g. through a telecommunication network, from fax machines or from the remote terminal of a computer, too. The procedure according to the present invention increases the length of time of the authorization process slightly only, and its extra costs are negligible compared to the increase of its security.

## 5 CLAIMS

1. Procedure for ensuring the authorization of using a bank card or some other means providing right of disposal of a bank account, said usage being aimed at performing a transaction resulting in a change of balance of a bank account, in the course of which the usage is subject to an authorization, and depending on the result of such an authorization the use of the bank card or other means is either granted or rejected, c h a r a c -  
10 t e r i z e d i n that an authorization override request signal, preferably an authorization override request signal carrying information about the transaction and/or the bank account to be charged and/or the expected  
15 change in the balance of said bank account, the authorization override request signal is converted into a message signal (31, 131, 351, 451, 551) transmittable through a telecommunication network, preferably through a digital mobile telecommunication network, preferably in SMS mode of operation, the a message signal (31, 131, 351, 451, 551) is transmitted to a  
20 telecommunication device, preferably a mobile telephone set, with a call number specified by the person having the right of disposal over the bank account to be charged and suitable to send a return message signal, the transmission is carried out preferably in SMS mode of operation, then from the return message signal (12, 112, 312, 412, 512) received through the  
25 telecommunication network, preferably in SMS mode of operation or DTFM mode of operation or in the form of a tone or from the lack of such a return message signal within a predetermined period of time, a return signal that can be evaluated by a computer is deducted, an override authorization signal with a meaning of either permission or rejection according to the  
30 information content of the return signal is generated, which override authorization signal is then used to either permit or reject the authorization of the usage.

5           2. Procedure according to claim 1   c h a r a c t e r i z e d   i n  
that the authorization override request signal is generated prior to the  
authorization.

          3. Procedure according to claim 1   c h a r a c t e r i z e d   i n  
that the authorization override request signal is generated after the  
10   authorization.

          4. Procedure according to claim 1   c h a r a c t e r i z e d   i n  
that the authorization override request signal is generated simultaneously  
with the authorization.

          5. Procedure for ensuring the authorization of using a bank card or  
15   some other means providing right of disposal of a bank account, said  
usage being aimed at performing a transaction resulting in a change of  
balance of a bank account, in the course of which the usage is subject to an  
authorization and, depending on the result of such an authorization, the use  
of the bank card or other means is either granted or rejected,   c h a r a c t  
20   e r i z e d   i n that an authorization override request signal, preferably an  
authorization override message signal (212) carrying information about the  
transaction and/or the bank account to be charged and/or the expected  
change in the balance of said bank account, the authorization override  
message signal (212) is transmitted through a telecommunication network,  
25   preferably through a digital mobile telecommunication network, preferably  
in SMS mode of operation or in DFTM mode of operation or in the form of a  
tone, to the principal bank keeping the account, then an authorization  
override signal, that can be evaluated by a computer, is deducted from the  
received authorization override message signal at the bank, which  
30   authorization override signal is used to enable the usage authorization.

          6. Procedure for ensuring the authorization of using a bank card or  
some other means providing right of disposal of a bank account, said  
usage being aimed at performing a transaction resulting in a change of



5 balance of a bank account, in the course of which the usage is subject to an authorization, where in the course of the authorization a data signal generated with the characteristics of the intended transaction and that of the bank card and the bank account to be charged is evaluated by means of comparison with the corresponding data set of a data file stored in a  
10 computer and, depending on the result of such a comparison, an authorizing signal (32, 133, 332, 434, 532) with a meaning of either granting or rejecting the usage or the transaction is generated, which signal will be used as a signal checking the authority and, in certain cases it is transferred to the site of usage, c h a r a c t e r i z e d i n that an  
15 authorization override request signal, containing the characteristic data of the transaction and, in certain cases, the identification data of the bank card and/or the bank account to be charged, is generated, the authorization override request signal is converted into a message signal (31, 131, 351, 451, 551) transmittable through a digital mobile telecommunication network  
20 in SMS mode of operation, the message signal (31, 131, 351, 451, 551) is transmitted through a digital mobile telecommunication network to the message storing memory of a mobile telephone set the call number of which has been specified by the person having the right of disposal of the bank account to be charged and, at the same time, the arrival of the  
25 message is displayed on the display unit of the same telephone set, then the return message signal (12, 112, 312, 412, 512) received through the telecommunication network, preferably a return message signal received in SMS mode of operation, or the lack of such a return message signal is converted into a return signal that can be evaluated by a computer, the  
30 return signal is evaluated by a computer, and an overriding authorization signal with an information contents corresponding to the evaluation is generated, which overriding authorization signal will be used to overwrite

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- 5 the authorizing signal (32, 133, 332, 434, 532) having a meaning of permission.

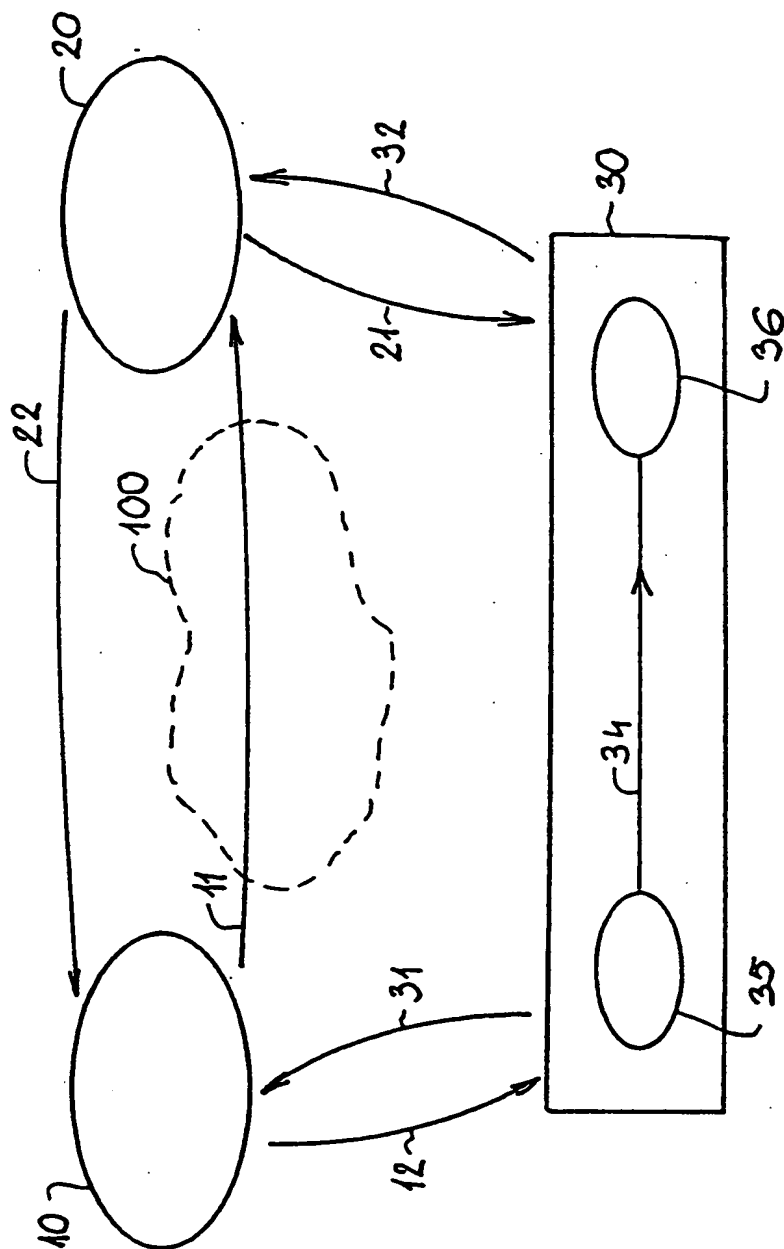


FIG. 1.

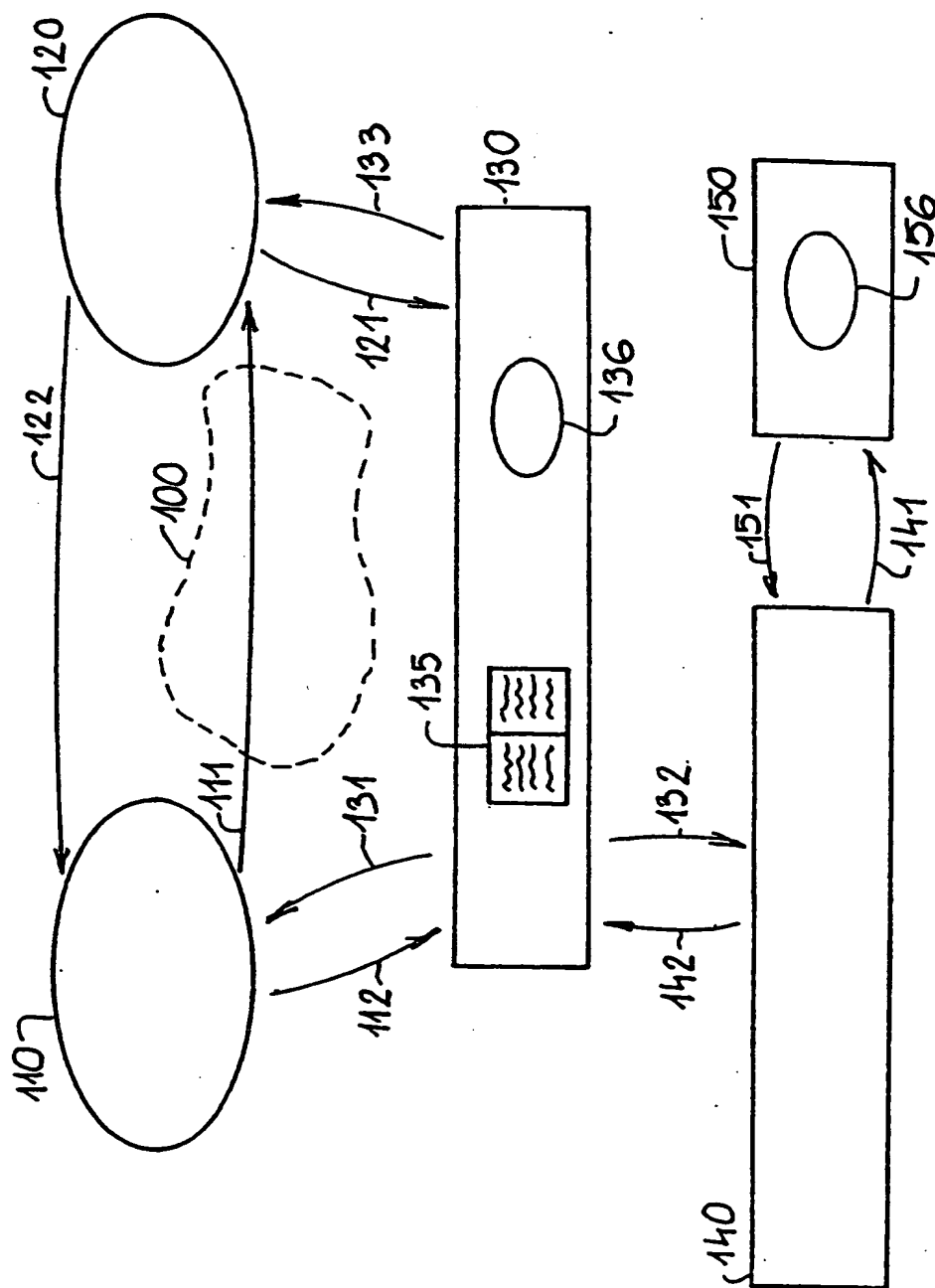


FIG 2.

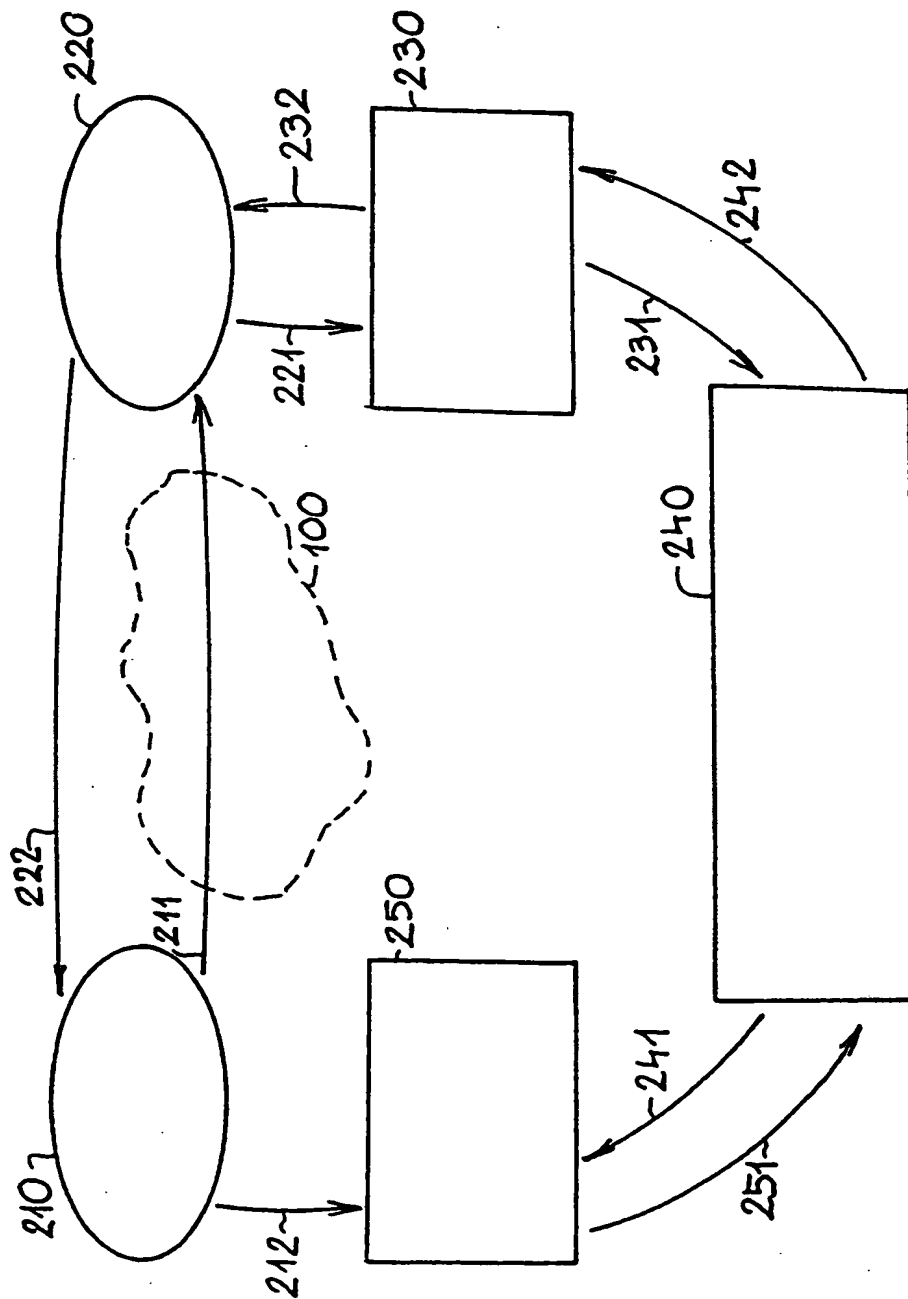


FIG 3.

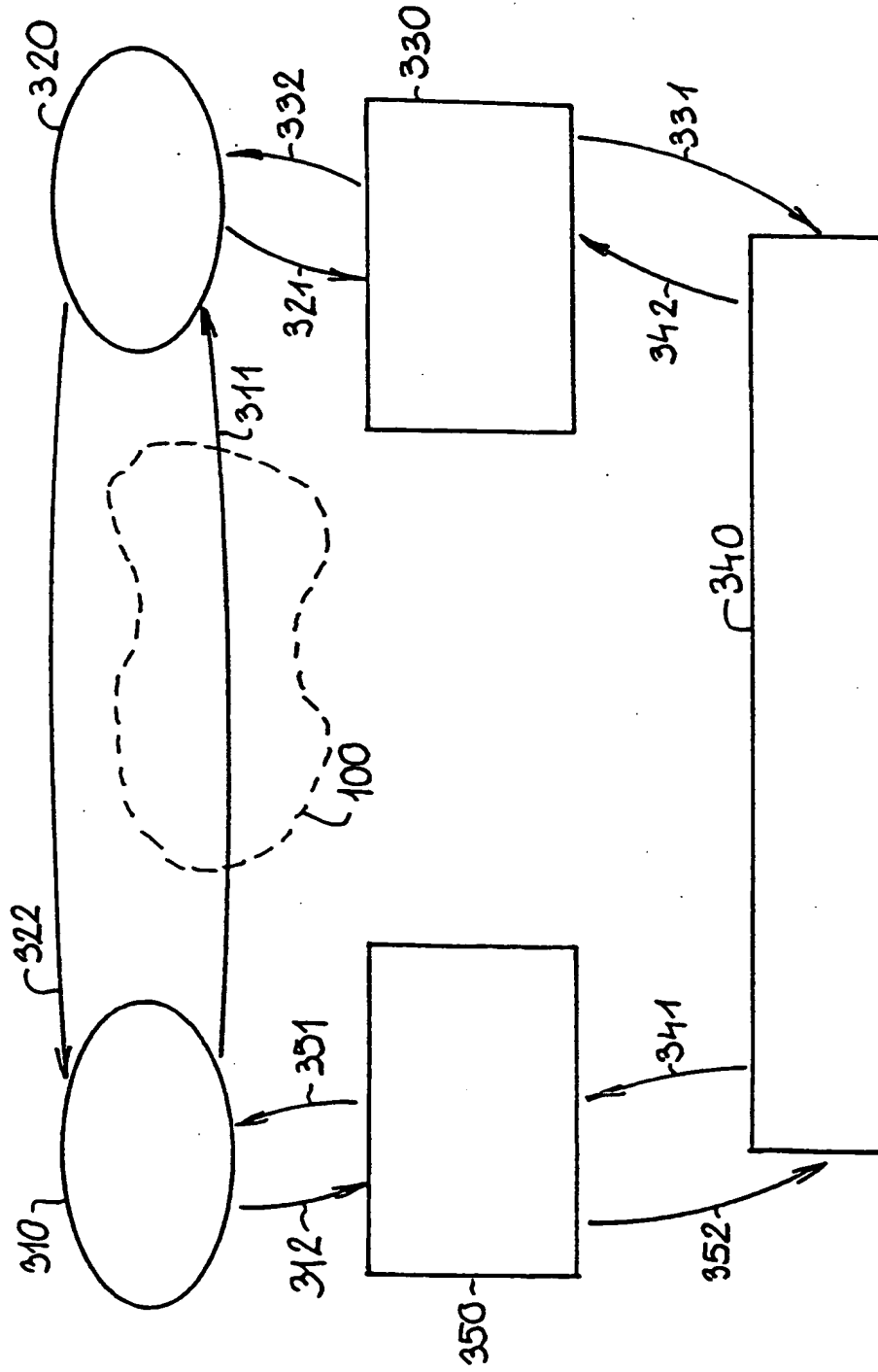


FIG 4.

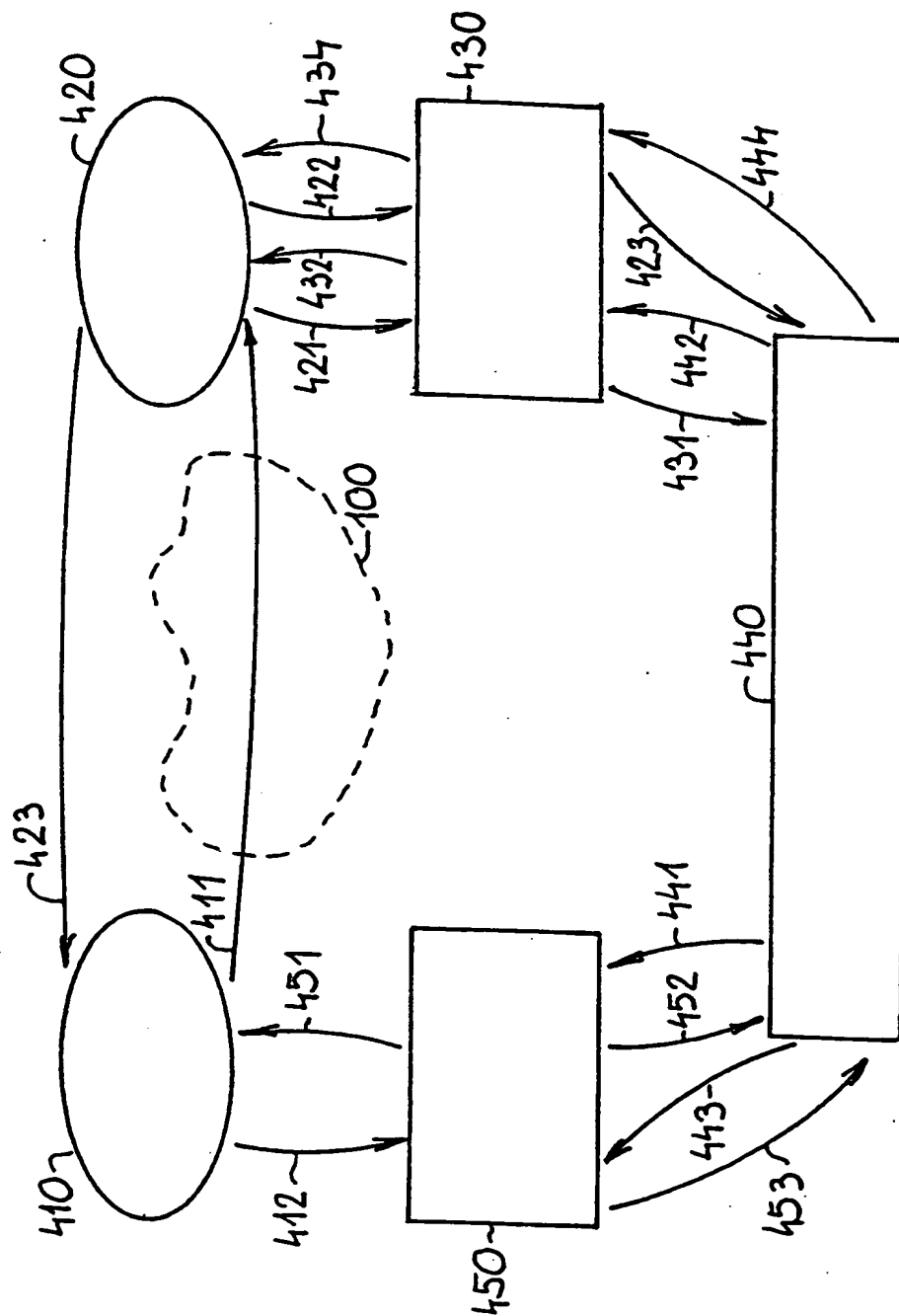


Fig. 5.

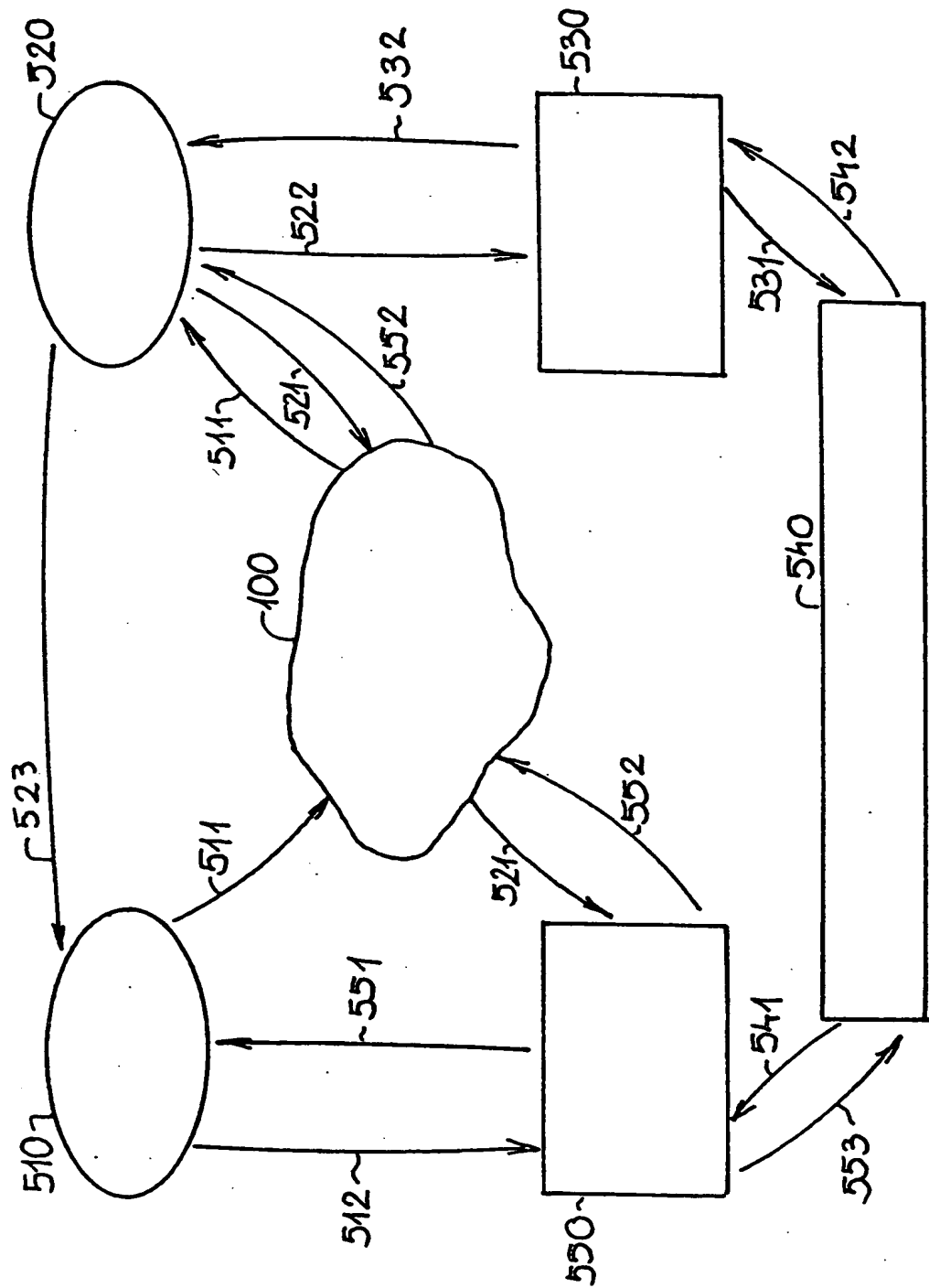


FIG 6.

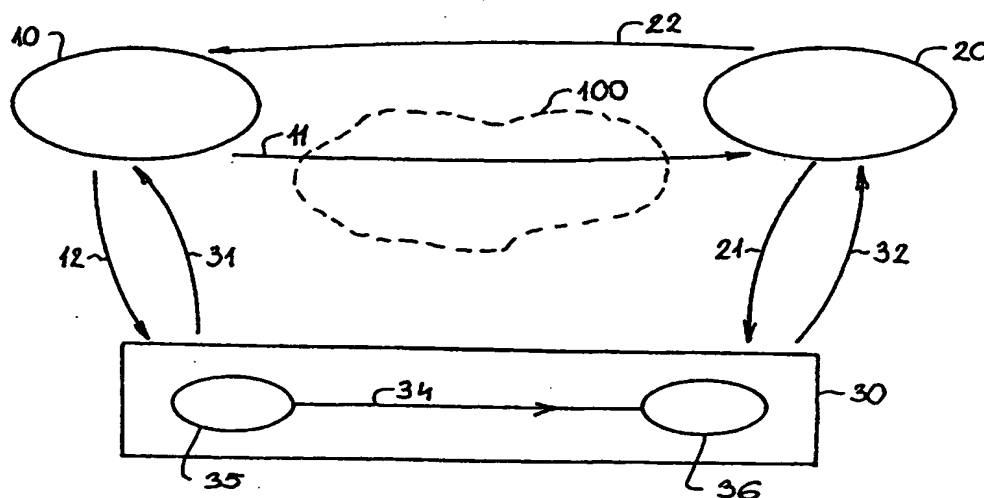




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(71)(72) Applicant and Inventor: ANDRASEV, Ákos [HU/HU]; Ulászló u. 45, H-1113 Budapest (HU).			
(74) Agent: DANUBIA; Bajcsy-Zsilinszky út 16, H-1051 Budapest (HU).		Published With international search report.	
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(54) Title: METHOD FOR CHECKING RIGHTFUL USE OF A DEBIT CARD OR SIMILAR MEANS GIVING RIGHT OF DISPOSING OF A BANK ACCOUNT



## (57) Abstract

The procedure according to the invention can be used both for granting authority verbally or electronically for the usage of a bank card, or for performing the investigation of the authority of a money order, prior to its execution. The essence of the procedure is that, prior to each intended transaction, in addition to the otherwise well known authorizing signal with a meaning of permitting the use of the card or to issue a money order, the authorizing signal will be overwritten by an authorizing override signal, deducted from a return message signal obtained previously from the decision maker through a telecommunication network, preferably through a digital mobile telecommunication network, in the form of an SMS message signal, as a reply to an authorization override request message, and the transaction is authorized by means of the authorizing signal validated by and having the meaning of the override authorization signal.

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# INTERNATIONAL SEARCH REPORT

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 6 G07F19/00 G07F7/10		
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 745 961 A (AT & T CORP) 4 December 1996	1,2,5
A	see claim 1; figure 1 ---	3,4,6
A	US 5 659 165 A (JENNINGS HORTON ET AL) 19 August 1997 see claim 1; figures 1,2 ---	1-6
A	WO 95 12859 A (VISA INT SERVICE ASS) 11 May 1995 see claim 1; figure 4 ---	1-6
A	US 5 613 001 A (BAKHOUM EZZAT G) 18 March 1997 see claim 1; figure 3 -----	1-6
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Name and mailing address of the ISA European Patent Office, P.B. 5618 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  <div style="text-align: center; font-weight: bold;">Kirsten, K</div>

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/HU 98/00087

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0745961	A	04-12-1996	US 5708422 A CA 2176163 A JP 8339407 A	13-01-1998 01-12-1996 24-12-1996
US 5659165	A	19-08-1997	AU 6595196 A CA 2227768 A CN 1196809 A EP 0842480 A HU 9802405 A PL 324618 A WO 9704411 A US 5825003 A	18-02-1997 06-02-1997 21-10-1998 20-05-1998 01-02-1999 08-06-1998 06-02-1997 20-10-1998
WO 9512859	A	11-05-1995	US 5465206 A AU 686270 B AU 8098494 A BR 9407964 A CA 2175473 A CA 2175476 A EP 0727072 A HU 74351 A JP 9504634 T LT 96060 A,B LV 11648 A LV 11648 B NO 961707 A NZ 275027 A PL 314309 A	07-11-1995 05-02-1998 23-05-1995 03-12-1996 11-05-1995 11-05-1995 21-08-1996 30-12-1996 06-05-1997 27-01-1997 20-12-1996 20-08-1997 25-06-1996 24-04-1997 02-09-1996
US 5613001	A	18-03-1997	NONE	